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CENTRAL FAX CENTER

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## In the United States Patent and Trademark Office

Appellants:	Jeffrey D. Lindsay et al.	Docket No.:	18,587
Serial No.:	10/747,923	Group:	3761
Confirmation No.:	7066	Examiner:	Laura C. Hill
Filed:	December 29, 2003	Date:	May 14, 2007
For:	NANOFABRICATED GECKO-LIKE FASTENERS WITH ADHESIVE HAIRS FOR DISPOSABLE ABSORBENT ARTICLES		

## Appeal Brief Transmittal Letter

Mail Stop Appeal Brief - Patents  
Commissioner For Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

Pursuant to 37 C.F.R. 41.37, transmitted herewith is an Appeal Brief pursuant to the Notice of Appeal which was mailed on March 13, 2007.

Please charge the \$500.00 fee (fee code 1402), pursuant to 37 C.F.R. 41.20(b)(2), which is due to Kimberly-Clark Worldwide, Inc. deposit account number 11-0875.

Respectfully submitted,

JEFFREY D. LINDSAY ET AL.

By:

  
Bryan R. Rosiejka

Registration No.: 55,583

## CERTIFICATE OF TRANSMISSION

I, Bryan R. Rosiejka, hereby certify that on May 14, 2007 this document is being facsimile transmitted to the United States Patent and Trademark Office, Fax No. (571) 273-8300.

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CENTRAL FAX CENTER****In the United States Patent and Trademark Office****MAY 14 2007**

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**Brief on Appeal to the Board of Patent Appeals and Interferences**

Mail Stop Appeal Brief - Patents  
Commissioner For Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

Pursuant to 37 C.F.R. 41.37 Appellants respectfully submit this Brief in support of their Appeal of Examiner Hill's **Final Rejection** of claims 1 – 51 which was mailed on November 13, 2006.

On March 13, 2007, Appellants, pursuant to 37 C.F.R. 41.31 mailed a Notice of Appeal along with a Petition For One-Month Extension of Time. Thus, the time period for filing this Brief ends on May 14, 2007 because the two-month date of May 13 is on a Sunday.

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**Real Party in Interest**

The present Application has been assigned to Kimberly-Clark Worldwide, Inc.

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**Related Appeals and Interferences**

There are no related appeals and/or interferences with regard to the present Application.

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**Status of Claims**

Claims 1 – 68 are pending in the present Application with claims 1 – 51 being finally rejected. Claims 52 – 68 have been withdrawn from consideration. Claim 69 has been canceled. The appealed claims include 1 – 51 and appear in the CLAIMS APPENDIX of this Brief.

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**Status of Amendments**

There were no amendments filed after the Final Rejection with regard to the present Application.

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**Summary of Claimed Subject Matter**

The following concise explanation of the subject matter defined in each of the independent claims involved in the appeal refers to the page and line numbers of the Specification and the Figures filed on December 29, 2003. While the following summary correlates claim elements to specific embodiments described in the application specification, it does not in any manner limit claim interpretation. Rather, the following summary is provided only to facilitate the Board's understanding of the subject matter of this appeal.

Generally, the present invention is directed to nanofabricated gecko-like fasteners with adhesive hairs for disposable absorbent articles (e.g., page 12-13 and FIGs 1-10B and 12A-12B).

Independent claim 1 is directed to a disposable absorbent article that comprises a nanofabricated attachment means (e.g., page 9 lines 1-8, page 20 lines 26-33 and FIGs 5-10B). The nanofabricated attachment means comprises adhesive hairs (e.g., page 6 line 15 to page 7 lines 7 and FIGs 1-4 and 12A-12B). The adhesive hairs are disposed on a flexible substrate (e.g., page 8 lines 9-22 and FIGs 1-4 and 12A-12B). These hairs are effective to adhesively engage an opposing surface that comprises a polymeric film or a fibrous web (e.g., page 9 lines 13-19).

Independent claim 5 is directed to a disposable absorbent article that comprises a gecko-like fastener (e.g. page 9 lines 1-8, page 28 lines 3-5 and FIGs 5-10B). The gecko-like fastener includes a flexible substrate (e.g., page 8 lines 9-22 and FIGs 1-4 and 12A-12B). The article includes a plurality of adhesive hairs rising from the substrate (e.g., page 6 line 15 to page 7 lines 7 and FIGs 1-4 and 12A-12B). The adhesive hairs each have a base section, a midsection, a top section, a height of about 0.5 microns to about 8 millimeters, and a diameter greater than about 0.05 microns (e.g., page 2 lines 13-17 and FIGs 1-3).

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**Grounds of Rejection to be Reviewed on Appeal****Ground 1**

Claims 1-29, 40-42, 44-46, 49-51, and 69 were rejected under 35 U.S.C. §103(a), as being unpatentable over WO 01/49776 A3 issued to Full et al. in view of U.S. Patent No. 6,127,018 issued to Akeno et al.

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#### Ground 2

Claims 1 and 69 were rejected under 35 U.S.C. §103(a) as being unpatentable over WO 01/49776 A3 issued to Full et al. in view of U.S. Patent No. 4,585,450 issued to Rosch et al.

#### Ground 3

Claims 30-32 were rejected under 35 U.S.C. §103(a) as being unpatentable over the WO 01/49776 A3 issued to Full et al. in view of U.S. Patent No. 6,127,018 issued to Akeno et al., and in further view of U.S. Publication No. 2001/0023568 issued to Schutt.

#### Ground 4

Claims 33-39 and 43 were rejected under 35 U.S.C. §103(a) as being unpatentable over WO 01/49776 A3 issued to Full et al. in view of U.S. Patent No. 6,127,018 issued to Akeno et al., and further in view of U.S. Publication No. 2003/0100880 issued to Magee et al.

#### Ground 5

Claims 47 and 48 were rejected under 35 U.S.C. §103(a) as being unpatentable over WO 01/49776 A3 issued to Full et al. in view of U.S. Patent No. 6,127,018 issued to Akeno et al., and further in view of U.S. Patent No. 4,299,223 issued to Cronkite, and further in view of U.S. Patent No. 5,279,604 issued to Robertson et al.

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#### Argument

1. Claims 1-29, 40-42, 44-46, 49-51, and 69 are not unpatentable over WO 01/49776 A3 issued to Full et al. (hereinafter "Full") in view of U.S. Patent No. 6,127,018 issued to Akeno et al. (hereinafter "Akeno").

Claim 69 has been previously canceled.

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In order for the Office to show a prima facie case of obviousness, M.P.E.P. §2143 requires that the Office must meet three criteria: (1) the prior art references must teach or suggest all of the claim limitations; (2) there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art to combine the references, and (3) there must be some reasonable expectation of success. Applicants' respectfully submit that the Office has failed to meet its burden under (1), (2) and (3), as there is no teaching or suggestion of all the claim limitations, there can be no suggestion or motivation to so modify the reference to arrive at applicants' recited invention, and moreover, there is not a reasonable expectation of success. In particular, as presented in the independent claims, and thus also their dependent claims, independent claims 1 and 5 clearly contain at least one element not found in the cited Full reference, even when combined with the Akeno reference (or the other art of record), namely, a flexible substrate.

Full teaches applying setae to a hard and rigid substrate surface. This substrate requirement by Full is exemplified in the Full specification and corresponding figures, which include: the end of a #2 insect pin; a semiconductor substrate; a silicon substrate; and a wafer, all of which are hard and rigid (e.g., non-flexible) substrates as of the filing date of Full. (See e.g., WO 01/49776 A3 page 7 lines 25-26, page 13 line 3, page 15 line 9, Figures 10A-10C, and Figure 13.) To overcome this deficiency, in the Office Action mailed November 13, 2006 (pages 6-7) the Office proposes that "Full discloses a fastener for clothes (page 1, lines 14-16 and page 16, lines 4-13) comprising nanofabricated attachment means (page 15, lines 1-2) comprising nanotube spatulae/adhesive hairs 136 (page 13, lines 29-30) disposed randomly and uniformly along substrate 130 to adhesively engage an opposing surface (figures 7, 9 and 10D) comprising a polystyrene surface (page 14, lines 16-18)." The Office further proposes that "Full further discloses an embodiment wherein substrate 100 comprises nitride and oxide layers 102, 104 respectively that possess a stress difference between the layers that cause the structure to *curl from the plane* defined by substrate 100 (page 13, lines 3-11, figures 5B and 5C) and thus Full discloses a 'flexible' substrate." The Office further admits that "Full does not expressly disclose a disposable absorbent article." The Office further contends that "Akeno discloses a skid-proof engaging element 2 molded on a front surface of a substrate sheet 1 suitable for use in a disposable absorbent article such as a diaper in which sloping heads 23 project each from necks 22 (column 3, lines 25-28 and column 4, lines 5-16 and figures 2-4)." The Office then proposes that "One would be motivated to modify the fastener of Full with the fastener on the disposable absorbent article of Akeno for a skid-proof element since both references disclose fasteners on wearing articles." The Office then concludes that "Therefore, it would be obvious to one of ordinary skill in the art at the time the invention was made to modify the fastener, thus providing a fastener on a disposable absorbent article."

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First, the mere fact that Full discloses a fastener for clothes does not equate to a fastener that includes a flexible substrate. Indeed, it is quite common for clothes to include fasteners which include hard and rigid (i.e., non-flexible) substrates, such as buttons and snaps.

Second, the reference by Full to a polystyrene surface is not directed to the substrate, as contended by the Office. In contrast, a closer view of Full reveals that molten polystyrene may be applied to a rigid substrate, wherein a spatula pipette can be used as an embossing tool to plastically deform the molten polystyrene to create artificial spatulae on the surface of the substrate (e.g., Full, page 14 lines 1-18.) Thus the molten polystyrene is not the substrate, as proposed by the Office, but rather forms the setae.

Third, the Office's position that Full further discloses an embodiment wherein the substrate comprises nitride and oxide layers that possess a stress difference between the layers that cause the structure to *curl from the plane* defined by substrate 100, and thus Full discloses a "flexible" substrate, is clearly incorrect. In contrast, a closer view of Full reveals that the nitride and oxide layer are, in fact, deposited onto a semiconductor substrate (Full, page 13 lines 3-5). Full further discloses that the nitride and oxide layers are then etched, after which these layers can curl up and eventually form artificial setae (Full, page 13 lines 5-11). Thus, the nitride and oxide layer are not the "substrate." Furthermore, it is well recognized in the art that a semiconductor substrate is necessarily a hard and rigid substrate, not flexible as in Applicants' invention.

Fourth, the Office proposes that the combination of Akeno with Full will result in Applicants' invention. In response, Applicants maintain that the addition of Akeno does not overcome the deficiencies of Full (i.e., a nanofabricated or gecko-like attachment means or fastener comprising adhesive hairs disposed on a flexible substrate.) To overcome this deficiency, the Office simply concludes that it would have been obvious to have one in the art at the time of the invention to so modify the fastener of Full.

The combination of Full and Akeno with regard to an absorbent article with a surface fastener teaches away from applicants' recited invention. In particular, Akeno discloses an absorbent article with a skid-proof fastening device (e.g., Akeno, column 1 line 55 – column 2 line 30). The Office proposes combining Full and Akeno by replacing the skid-proof fastening device of Akeno with the adhesive microstructure of Full. In this regard, the best that could result is an absorbent article with an adhesive microstructure having a hard and rigid (i.e., non-flexible) substrate. This would be an undesirable result with regard to Applicants' invention as it would have an adverse affect with respect to comfort and fit of an absorbent article, such as a diaper. Furthermore, the adhesive microstructure would likely not maintain its integrity when exposed to the constant movement and flexing of the

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absorbent article by a wearer. Thus, one of ordinary skill in the art combining the teachings of Full and Akeno would not be lead to conclude that the combination renders obvious Applicants' invention.

In addition, it is not appropriate to engage in hindsight reconstruction, as the Office has proposed. It is inappropriate to pick and choose isolated elements from various prior art references and combine them so as to yield the invention in question when such combining would not have been an obvious thing to do at the time in question. *Panduit Corporation v. Dennison Manufacturing Company*, 227 USPQ 337 (Fed. Cir. 1985).

The mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification. *In re Gordon*, 733 F.2d at 902, 221 USPQ at 1127. *In re Fritch*, 23 USPQ 2nd 1780, 1783-1784 (Fed. Cir. 1992).

It is impermissible to use the claimed invention as an instruction manual or "template" to piece together the teachings of the prior art so that the claimed invention is rendered obvious. *In re Gorman*, 933 Fed. 2nd 982, 987, 18 USPQ 2d 1885, 1888 (Fed. Cir. 1991). *In re Fritch*, 23 USPQ 2nd 1780 at 1784 (Fed. Cir. 1992). One cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention. *In re Fine*, 837 Fed. 2d at 1075, 5 USPQ 2d at 1600. *In re Fritch*, 23 USPQ 2nd 1780 at 1784 (Fed. Cir. 1992). Where the cited references do not teach how to make the particular combinations needed to arrive at the invention called for by Appellants' claims, the claimed invention cannot be deemed "obvious". *Ex parte Levengood*, 1993.

It is also well established that a prior art reference must be evaluated as an entirety and that the prior art must be evaluated as a whole. *W.L. Gore and Associates, Inc. v. Garlock, Inc.*, 220 USPQ 303 (Fed. Cir. 1983). Where neither any reference considered in its entirety, nor the prior art as a whole, suggests the combination claimed, the invention is non-obvious. *Fromson v. Advance Offset Plate, Inc.*, 225 USPQ 26 (Fed. Cir. 1985).

In contrast to Full, independent claims 1 and 5 of Applicants' invention include the feature of a nanofabricated or gecko-like attachment means comprising adhesive hairs disposed on a flexible substrate. The combination of Akeno with Full does not overcome the deficiencies of Full. There is no suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify Full or to combine the teachings of Full and Akeno to arrive at Applicants' invention. Thus, at least the first requirement of MPEP § 2143 (i.e., the prior art references must teach or suggest all of the claim limitations) is not present. In addition, there is no teaching by the combination of references to dispose the hairs onto a flexible substrate. Thus, at least the third

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requirement of MPEP § 2143 (i.e., there must be a reasonable expectation of success) is also not present. Accordingly, the rejection of claims 1-29, 40-42, 44-46 and 49-51 as being unpatentable over Full, in view of Akeno, should be reversed.

2. Claims 1 and 69 were rejected under 35 U.S.C. §103(a) as being unpatentable over WO 01/49776 A3 issued to Full et al. (hereinafter "Full") in view of U.S. Patent No. 4,585,450 issued to Rosch et al. (hereinafter "Rosch").

Claim 69 was previously canceled.

The deficiency of Full with respect to claim 1 is discussed in Section 1 above. To overcome this deficiency, in the Office Action mailed November 13, 2006 (pages 11-12), the Office admits that "Full *does not expressly disclose* a disposable absorbent article with the nanofabricated fastener." The Office further proposes that "Rosch discloses that in order to eliminate the need for pins or other mechanical fasteners to join the waist portions together, which would pose a danger to the infant, and so as to provide a complete garment that is ready for use without the need for additional fastening devices, disposable diapers have included pressure-adhesive tabs as fastening means for securing the front and rear panels together about the waist of an infant (column 1, lines 25-33)." The Office then proposes that "One would be motivated to modify the fastener of Full with the fastener for use on disposable absorbent articles for improved attachment since both references disclose attachment means." The Office then concludes that "Therefore, it would be obvious to one of ordinary skill in the art at the time the invention was made to modify the fastener, thus providing a disposable absorbent article with fastener."

The combination of Full and Rosch with regard to an absorbent article with a fastening means teaches away from applicants' recited invention. In particular, the Office refers to the Background section of Rosch to describe a fastening means which includes a chemical adhesive on one surface of the fastening means (e.g., Rosch, column 1 lines 34-39). The Office then proposes combining Full and Rosch by replacing the fastening means of Rosch with the adhesive microstructure of Full. In this regard, the best that could result is an absorbent article with an adhesive microstructure having a hard and rigid (i.e., non-flexible) substrate. This would be an undesirable result with regard to Applicants' invention as it would have an adverse affect with respect to comfort and fit of the absorbent article, such as a diaper. Furthermore, the adhesive microstructure would likely not maintain its integrity when exposed to the constant movement and flexing of the absorbent article by a wearer. Thus, one of ordinary skill in the art combining the teachings of Full and Rosch would not be lead to conclude that



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the combination renders obvious applicants' invention.

In addition, as discussed in Section 1 above, it is not appropriate to engage in hindsight reconstruction, as the Office has proposed.

In contrast to Full, independent claim 1 of Applicants' invention includes the feature of a nanofabricated attachment means comprising adhesive hairs disposed on a flexible substrate. The combination of Rosch with Full does not overcome the deficiencies of Full. There is no suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify Full or to combine the teachings of Full and Rosch to arrive at Applicants' invention. Thus, at least the first requirement of MPEP § 2143 (i.e., the prior art references must teach or suggest all of the claim limitations) is not present. In addition, there is no teaching by the combination of references to dispose the hairs onto a flexible substrate. Thus, at least the third requirement of MPEP § 2143 (i.e., there must be a reasonable expectation of success) is also not present. Accordingly, the rejection of claim 1 as being unpatentable over Full, in view of Rosch, should be reversed.

3. Claims 30-32 were rejected under 35 U.S.C. §103(a) as being unpatentable over the WO 01/49776 A3 issued to Full et al. (hereinafter "Full") in view of U.S. Patent No. 6,127,018 issued to Akeno et al. (hereinafter "Akeno"), and in further view of U.S. Publication No. 2001/0023568 issued to Schutt (hereinafter "Schutt").

Claims 30-32 depend on claim 27, and ultimately depend on independent claim 5. The deficiency of Full with respect to claims 5 and 27 is discussed in Section 1 above. The deficiency with respect to combining Full and Akeno is also discussed in Section 1 above. Claims 30-32, in addition to the features of claims 5 and 27, include the added feature of a particular coating. To address the additional features and to overcome this deficiency, the Office proposes combining Full with Akeno and further with Schutt. In the Office Action mailed November 13, 2006 (page 12), the Office admits that "Full does not expressly disclose the coating is a titanium dioxide treated with a UV absorbing material." The Office further proposes that "Schutt discloses coating compositions such as a titanium dioxide treated with a UV absorbing material for a durable surface finish (page 5, paragraph 0088 and abstract)." The Office then proposes that "One would be motivated to modify the coating of Full/Akeno with the titanium dioxide UV-absorbing material of Schutt for improved surface characteristics since the references disclose surface coatings." The Office then concludes that "Therefore, it would be obvious to one of ordinary skill in the art at the time the invention was made to modify the coating, thus providing a

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titanium dioxide UV-absorbing coating."

Schutt is directed to reinforcing bars for concrete structures and is, therefore, not related to absorbent articles. Therefore, there is no suggestion or motivation, either in the reference itself or in the knowledge generally available to one of ordinary skill in the art to combine this reference with Full and Akeno, as required by the second requirement of MPEP § 2143.

In addition, the combination of Full and Akeno with regard to an absorbent article with a surface fastener teaches away from applicants' recited invention. In particular, Akeno discloses an absorbent article with a skid-proof fastening device (e.g., Akeno, column 1 line 55 – column 2 line 30). The Office proposes combining Full and Akeno by replacing the skid-proof fastening device of Akeno with the adhesive microstructure of Full. In this regard, the best that could result is an absorbent article with an adhesive microstructure having a hard and rigid (i.e., non-flexible) substrate. This would be an undesirable result with regard to Applicants' invention as it would have an adverse affect with respect to comfort and fit of an absorbent article, such as a diaper. Furthermore, the adhesive microstructure would likely not maintain its integrity when exposed to the constant movement and flexing of the absorbent article by a wearer. The addition of Schutt does not overcome this deficiency. Thus, one of ordinary skill in the art combining the teachings of Full with Akeno and Schutt would not be lead to conclude that the combination renders obvious applicants' invention.

In addition, as discussed in Section 1 above, it is not appropriate to engage in hindsight reconstruction, as the Office has proposed.

Furthermore, in contrast to Full, independent claim 5 of Applicants' invention includes the feature of a gecko-like fastener including a flexible substrate and a plurality of adhesive hairs rising from the substrate. The combination of Akeno and Schutt with Full does not overcome the deficiencies of Full. There is no suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify Full or to combine the teachings of Full, Akeno and Schutt to arrive at Applicants' invention. Thus, at least the first requirement of MPEP § 2143 (i.e., the prior art references must teach or suggest all of the claim limitations) is not present. In addition, there is no teaching by the combination of references to dispose the hairs onto a flexible substrate. Thus, at least the third requirement of MPEP § 2143 (i.e., there must be a reasonable expectation of success) is also not present. Accordingly, the rejection of claims 30-32 as being unpatentable over Full, in view of Akeno, and in further view of Schutt, should be reversed.

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4. Claims 33-39 and 43 were rejected under 35 U.S.C. §103(a) as being unpatentable over WO 01/49776 A3 issued to Full et al. (hereinafter "Full") in view of U.S. Patent No. 6,127,018 issued to Akeno et al. (hereinafter "Akeno"), and further in view of U.S. Publication No. 2003/0100880 issued to Magee et al. (hereinafter "Magee").

Claims 33-39 and 43 depend on independent claim 5. The deficiency of Full with respect to claim 5 is discussed in Section 1 above. The deficiency with respect to combining Full and Akeno is also discussed in Section 1 above. To address the additional features claims 33-39 and 43, and to overcome this deficiency of the references with respect to claim 5, the Office proposes combining Full with Akeno and further with Magee. In the Office Action mailed November 13, 2006 (pages 12-13), the Office admits that "Full *does not expressly disclose* elastic regions." The Office further proposes that "Magee discloses a diaper 20 may also include such other features as are known in the art including leg cuffs, front and rear ear panels, waist cap features, elastics and the like to provide better fit, containment and aesthetic characteristics (page 3, paragraph 0039)." The Office then concludes that "Therefore, it would be obvious to one of ordinary skill in the art at the time the invention was made to modify Full/Akeno with elastics."

The combination of Full and Akeno with regard to an absorbent article with a surface fastener teaches away from applicants' recited invention. In particular, Akeno discloses an absorbent article with a skid-proof fastening device (e.g., Akeno, column 1 line 55 – column 2 line 30). The Office proposes combining Full and Akeno by replacing the skid-proof fastening device of Akeno with the adhesive microstructure of Full. As discussed above, In this regard, the best that could result is an absorbent article with an adhesive microstructure having a hard and rigid (i.e., non-flexible) substrate. This would be an undesirable result with regard to Applicants' invention as it would have an adverse affect with respect to comfort and fit of an absorbent article, such as a diaper. Furthermore, the adhesive microstructure would likely not maintain its integrity when exposed to the constant movement and flexing of the absorbent article by a wearer. The addition of Magee does not overcome this deficiency. Thus, one of ordinary skill in the art combining the teachings of Full with Akeno and Magee would not be lead to conclude that the combination renders obvious Applicants' invention.

In addition, Magee is directed to elastics within an absorbent article, while the adhesive microstructure of Full requires a hard and rigid (i.e., non-flexible) substrate, as discussed above. Thus, there is no suggestion, and one of ordinary skill in the art would not be motivated, to combine Magee with Full, since they teach away from each other. Even if one were able to combine them, there is no teaching from the combination of Full, Akeno and Magee for an absorbent article which includes the feature of a gecko-like fastener including a flexible substrate and a plurality of adhesive hairs rising

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from the substrate. Thus, the second requirement of MPEP § 2143 is not present.

In addition, as discussed in Section 1 above, it is not appropriate to engage in hindsight reconstruction, as the Office has proposed.

Furthermore, in contrast to Full, independent claim 5 of Applicants' invention includes the feature of a gecko-like fastener including a flexible substrate and a plurality of adhesive hairs rising from the substrate. The combination of Akeno and Magee with Full does not overcome the deficiencies of Full. There is no teaching or suggestion, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify Full or to combine the teachings of Full, Akeno and Magee to arrive at Applicants' invention. Thus, at least the first requirement of MPEP § 2143 (i.e., the prior art references must teach or suggest all of the claim limitations) is not present. In addition, there is no teaching by the combination of references to dispose the hairs onto a flexible substrate. Thus, at least the third requirement of MPEP § 2143 (i.e., there must be a reasonable expectation of success) is also not present. Accordingly, the rejection of claims 33-39 and 43 as being unpatentable over Full, in view of Akeno, and in further view of Magee, should be reversed.

5. Claims 47 and 48 were rejected under 35 U.S.C. §103(a) as being unpatentable over WO 01/49776 A3 issued to Full et al. (hereinafter "Full") in view of U.S. Patent No. 6,127,018 issued to Akeno et al. (hereinafter "Akeno"), and further in view of U.S. Patent No. 4,299,223 issued to Cronkite (hereinafter "Cronkite"), and further in view of U.S. Patent No. 5,279,604 issued to Robertson et al. (hereinafter "Robertson").

Claims 47 and 48 depend on independent claim 5. The deficiency of Full with respect to claim 5 is discussed in Section 1 above. The deficiency with respect to combining Full and Akeno is also discussed in Section 1 above. To address the additional features claims 47 and 48, and to overcome this deficiency of the references with respect to claim 5, the Office proposes combining Full with Akeno and further view of Cronkite, and in further view of Robertson. In the Office Action mailed November 13, 2006 (page 13), the Office admits that "Full/Akeno do not expressly disclose removable cover over the hairs for protection from contamination." The Office further proposes that "It is well-known to those of ordinary skill in the art to employ a removable cover over a fastener to prevent contamination before use as supported by Cronkite and Robertson." The Office then concludes that "Therefore, it would be obvious to one of ordinary skill in the art at the time the invention was made to modify the fastening hairs of Full/Akeno, thus providing a removable cover."

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The combination of Full and Akeno with regard to an absorbent article with a surface fastener teaches away from applicants' recited invention. In particular, Akeno discloses an absorbent article with a skid-proof fastening device (e.g., Akeno, column 1 line 55 – column 2 line 30). The Office proposes combining Full and Akeno by replacing the skid-proof fastening device of Akeno with the adhesive microstructure of Full. As discussed above, in this regard, the best that could result is an absorbent article with an adhesive microstructure having a hard and rigid (i.e., non-flexible) substrate. This would be an undesirable result with regard to Applicants' invention as it would have an adverse affect with respect to comfort and fit of an absorbent article, such as a diaper. Furthermore, the adhesive microstructure would likely not maintain its integrity when exposed to the constant movement and flexing of the absorbent article by a wearer. Cronkite discloses a diaper tab with an adhesive coating and a removable release web (e.g., Cronkite, column 2 lines 35-44). Robertson discloses a release liner which serves to keep an adhesive attachment means from drying out and from sticking to extraneous surfaces prior to use (e.g., Robertson, column 14 lines 35-38). However, the addition of Cronkite and Robertson do not overcome this deficiency of combining Full and Akeno. Thus, one of ordinary skill in the art combining the teachings of Full with Akeno, Cronkite and Robertson would not be lead to conclude that the combination renders obvious Applicants' invention.

In addition, Cronkite and Robertson are directed to release covers for substrates that include a chemical adhesive. In contrast, claims 47 and 48 of Applicants' invention is concerned with protecting nanofabricated hairs, rather than a chemical adhesive. Thus, there is no suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art to combine Full, Akeno, Cronkite and Robertson for an absorbent article which includes the feature of protecting a gecko-like fastener including a flexible substrate and a plurality of adhesive hairs rising from the substrate. Thus, the second requirement of MPEP § 2143 is not present.

In addition, as discussed in Section 1 above, it is not appropriate to engage in hindsight reconstruction, as the Office has proposed, both in regard to the flexible substrate, and the protective covering.

Furthermore, in contrast to Full, independent claim 5 of Applicants' invention includes the feature of a gecko-like fastener including a flexible substrate and a plurality of adhesive hairs rising from the substrate. The combination of Akeno, Cronkite and Robertson with Full does not overcome the deficiencies of Full. There is no teaching or suggestion, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify Full or to combine the teachings of Full, Akeno, Cronkite and Robertson to arrive at Applicants' invention. Thus, at least the first requirement of MPEP § 2143 (i.e., the prior art references must teach or suggest all of the claim

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limitations) is not present. In addition, there is no teaching by the combination of references to dispose the hairs onto a flexible substrate. Thus, at least the third requirement of MPEP § 2143 (i.e., there must be a reasonable expectation of success) is also not present. Accordingly, the rejection of claims 47 and 48 as being unpatentable over Full, in view of Akeno, in further view of Cronkite, and in further view of Robertson, should be reversed.

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#### Conclusion

For the reasons stated above it is Appellants' position that the Examiner's rejection of claims 1-51 has been shown to be untenable and should be **reversed** by the Board. It is respectfully submitted that applicants' claimed invention is neither successfully taught nor inherent in the cited references. Additionally, the Final Office Action has not established a prima facie case that the particular combination of components called for by the Applicants' claims would be suggested alone, or by a proper combination of the cited references. To the contrary, it is readily apparent that when each of the cited references is considered in its entirety and each reference is taken as a whole, the references alone, and in combination, would not teach applicants' claimed invention. It is, therefore, readily apparent that the invention called for by applicants' claims is patentable over the cited references.

Accordingly, it is respectfully submitted that claims 1-51 are in allowable condition, and that the rejections in the Final Office Action should be reversed.

Please charge the \$500.00 fee (fee code 1402), pursuant to 37 C.F.R. 41.20(b)(2), for filing this Appeal Brief to Kimberly-Clark Worldwide, Inc. deposit account number 11-0875. Any additional prosecutorial fees which are due may also be charged to deposit account number 11-0875.

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Respectfully submitted,

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**CERTIFICATE OF TRANSMISSION**

I, Bryan R. Rosiejka, hereby certify that on May 14, 2007 this document is being facsimile transmitted to the United States Patent and Trademark Office, Fax No. (571) 273-8300.

  
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Bryan R. Rosiejka

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**Claims Appendix**

The claims on appeal are:

1. A disposable absorbent article comprising a nanofabricated attachment means comprising adhesive hairs disposed on a flexible substrate wherein said hairs are effective to adhesively engage an opposing surface comprising a polymeric film or a fibrous web.
2. The article of claim 1 wherein the attachment means has a packing density of at least 500 hairs per square millimeter.
3. The article of claim 1 wherein said hairs have an average diameter of about 50 microns or less and an average height-to-diameter ratio of about 3 or greater.
4. The article claim 1 wherein said hairs are effective to adhesively engage an opposing surface comprising a polymeric film or fibrous web with an average adhesive force of 10 nanoNewtons or greater per hair.
5. A disposable absorbent article comprising a gecko-like fastener including a flexible substrate, a plurality of adhesive hairs rising from said substrate, said adhesive hairs each having a base section, a midsection, a top section, a height of about 0.5 microns to about 8 millimeters, and a diameter greater than about 0.05 microns.
6. The article of claim 5 wherein said hairs terminate in a plurality of fine terminating elements.
7. The article of claim 5 wherein said hairs have a height of about 2 microns to about 1000 microns.



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8. The article of claim 5 wherein said hairs have a diameter of about 0.05 microns to about 10 microns.
9. The article of claim 5 wherein said hairs are spaced apart by a first distance of about 1 micron to about 1000 microns.
10. The article of claim 5 wherein said hairs are spaced apart by a second distance of about 1 micron to about 1000 microns.
11. The article of claim 5 wherein the ratio of a first distance between said hairs to the diameter of said hairs is about 3 to about 100.
12. The article of claim 5 wherein the ratio of a second distance between said hairs to the diameter of said hairs is about 3 to about 100.
13. The article of claim 5 wherein the ratio of the height of said hairs to the diameter of said hairs is about 2 to about 1000.
14. The article of claim 5 wherein at least one of said hairs is perpendicular to the plane of said substrate.
15. The article of claim 5 wherein at least one of said hairs is oriented at an angle between 0° and 90° to the plane of said substrate.
16. The article of claim 5 wherein at least one of said hairs is axisymmetric.

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17. The article of claim 5 wherein at least one of said hairs has a base that is axisymmetric and an end portion that is flattened.
18. The article of claim 17 wherein the ratio of the width of said flattened end to the thickness of said flattened end is about 2 to about 25.
19. The article of claim 17 wherein said flattened end portion occupies about 5-percent to about 80-percent of said height of said hair.
20. The article of claim 5 wherein at least one of said hairs is hollow.
21. The article of claim 5 wherein said at least one hair comprises hollow materials, microspheres, carbon nanotubes, zeolites, or combinations thereof.
22. The article of claim 5 wherein said hairs comprise molecules with hollow chambers.
23. The article of claim 22 wherein said molecules are cyclodextrins, crown ethers, polyhedral oligomeric silsesquioxanes, or combinations thereof.
24. The article of claim 5 wherein said substrate is apertured.
25. The article of claim 5 wherein said substrate is a liquid impervious web.
26. The article of claim 5 wherein the thickness of said substrate comprises a repeating pattern of thickness variations.

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27. The article of claim 5 wherein said substrate is creped, embossed, apertured, coated, or combinations thereof.
28. The article of claim 27 wherein said coating is on at least one side of said substrate.
29. The article of claim 27 wherein said coating is hydrophobic.
30. The article of claim 27 wherein said coating is hydrophilic.
31. The article of claim 27 wherein said coating is a metal oxide.
32. The article of claim 27 wherein said metal oxide is titanium dioxide treated with a UV absorbing material that is thermally treated.
33. The article of claim 5 wherein said substrate comprises regions of elastic material.
34. The article of claim 5 wherein said substrate is substantially elastic and homogeneous.
35. The article of claim 5 wherein said substrate contains discrete elastic regions separated by less elastic regions.
36. The article of claim 5 wherein said substrate contains discrete elastic regions separated by inelastic regions.
37. The article of claim 5 wherein said fastener is stretchable.

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38. The article of claim 5 wherein said fastener comprises elastic regions.
39. The article of claim 5 wherein an attachment surface of said fastener is elastic, inelastic, or combination thereof.
40. The article of claim 5 wherein said fastener is adapted for fastening said article to itself.
41. The article of claim 5 wherein said fastener is adapted for fastening said article to another object.
42. The article of claim 5 wherein said fastener is adapted for joining two or more components of said article.
43. The article of claim 5 wherein said fastener comprises part of a side seam of said article.
44. The article of claim 5 wherein said fastener comprises a three-dimensional topography characterized by a series of peaks and valleys.
45. The article of claim 44 wherein said peaks and valleys alternate in first direction.
46. The article of claim 44 wherein groups of hairs are selectively disposed on said peaks of said substrate, said valleys of said substrate, or combination thereof.
47. The article of claim 5 wherein said hairs are protected from contamination with other materials until pressed into contact with an opposing surface.

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48. The article of claim 5 wherein said hairs are protected with a removable cover.
49. The article of claim 5 wherein said fastener comprises substantially hair free regions between groups of hair.
50. The article of claim 5 wherein said hairs are disposed substantially uniformly along the fastener.
51. The article of claim 5 wherein said hairs are disposed substantially randomly along the fastener.

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**Evidence Appendix**

None.

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**Related Proceedings Appendix**

None.